Issued to: Terra-Gen Dixie Valley, LLC, as Permittee

Section VI. Specific Operating Conditions

A. **Emission Unit # PF1.001** location: North 4,424.456 km, East 426.969 km, UTM (Zone 11)

A. System 01 – Cooling Tower	
PF1.001	Induced Draft, Counter-Flow Cooling Tower; Hamon; Model & Serial # not applicable SCC: 10101502

1. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
   Air Pollution Control Equipment
   Emissions from **PF1.001** shall be controlled by drift eliminators with a maximum drift loss of 0.002%.

2. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
   Emission Limits
   a. On and after the date of startup of **PF1.001** the permittee will not discharge or cause the discharge into the atmosphere from **PF1.001** the following pollutants in excess of the following specified limits:
      i. NAC 445B.305 *Part 70 Program* – The discharge of PM_{10} (particulate matter less than 10 microns in diameter) to the atmosphere from **PF1.001** will not exceed **0.80 pound per hour**. This limit is less than the **123.48 pounds per hour** maximum allowable emission limit as determined from NAC 445B.22033 and the maximum allowable cooling water flowrate as limited in **A.3.c.** of this section.
      ii. NAC 445B.305 *Part 70 Program* – The discharge of PM_{10} to the atmosphere from **PF1.001** will not exceed **3.50 tons per year**, based on a 12-month rolling period.
      iii. NAC 445B.305 *Federally Enforceable SIP Requirement* – The discharge of PM (particulate matter) to the atmosphere from **PF1.001** will not exceed **0.80 pound per hour**.
      iv. NAC 445B.305 *Federally Enforceable SIP Requirement* – The discharge of PM to the atmosphere from **PF1.001** will not exceed **3.50 tons per year**, based on a 12-month rolling period.
      v. 445B.305 *State Only Requirement* – The discharge of H_2S (hydrogen sulfide) to the atmosphere from **PF1.001** will not exceed **56.80 pounds per any one-hour period**, nor more than **175.0 tons per year**, based on a 12-month rolling period.
      vi. 445B.2208 *State Only Requirement* – The emission of hydrogen sulfide from the facilities for generating electricity from geothermal brine at the Terra-Gen Dixie Valley, LLC geothermal power plant located in Air Quality Control Region 147, Hydrographic Basin 128 – Dixie Valley, may not exceed **249 short tons** (**225.9 metric tons**) per year.
      vii. 445B.305 *State Only Requirement* – The TDS (total dissolved solids) of the cooling tower water will not exceed **1,000 ppm, by weight**, per analysis.
      viii. NAC 445B.22017 *State Only Requirement*
         (1) The opacity from **PF1.001** will not equal or exceed **20%**.
         (2) The provisions of this section do not apply to that part of the opacity that consists of uncombined water. The burden of proof to establish the application of this exemption is upon the person seeking to come within the exemption.

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Section VI. Specific Operating Conditions (continued)

A. Emission Unit # PF1.001 (continued)

3. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
Operating Parameters
   a. The maximum allowable geothermal fluid flowrate for **PF1.001** will not exceed **7,500,000 pounds (3,750 tons) per any one-hour period**.
   b. The maximum allowable annual geothermal fluid flowrate for **PF1.001** will not exceed **32,850,000 tons per year**, based on a 12-month rolling period.
   c. The maximum allowable cooling water flowrate for **PF1.001** will not exceed **40,000,000 pounds (20,000 tons) per any one-hour period**.
   d. The maximum allowable annual cooling water flowrate for **PF1.001** will not exceed **172,400,000 tons per year, based on a 12-month rolling period**.
   e. Hours
   PF1.001 may operate a total of **8,760 hours per year**.

4. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
Performance/Compliance Testing and Monitoring/Recordkeeping
The Permittee, upon issuance of this operating permit will:
   a. H_2S sampling will be conducted every two years as follows:
      i. A sample of H_2S concentration (ppm by weight) from the High Pressure (HP) and Low Pressure (LP) steam separators will be collected, analyzed and recorded.
   b. To demonstrate facility compliance with the hourly and yearly emission limit for H_2S:
      i. Monitor and record the geothermal brine and steam flow rate, in pounds per hour, on a daily basis.
      ii. Monitor and record the geothermal brine and steam flow rate, in pounds per hour, on a monthly basis, based on the cumulative records as specified in **4.b.i.** of this section.
      iii. Monitor and record the total annual brine and steam flow rate, in tons per year, on a 12-month rolling period, based on the cumulative records as specified in **4.b.ii.** of this section.
      iv. Record the hours of operation for **PF1.001** on a daily basis.
      v. Record the total annual hours of operation for **PF1.001** based on the cumulative records as specified in **4.b.vi.** of this section.
      vi. Calculate and record the H_2S emissions, in pounds per hour, on a monthly basis at the end of each calendar month. The H_2S emissions will be calculated by using the H_2S concentration, in ppm by weight, from the High Pressure (HP) and Low Pressure (LP) steam separators as recorded in **4.a.i.** of this section and the geothermal steam flow rate, in pounds per hour, as recorded in **4.b.ii.** of this section. The total input of H_2S in the steam provides the H_2S hourly emissions. The H_2S sample results recorded in **4.a.i.** of this section will be used for the consequent calculations until the next analysis results for concentration are available.
      vii. The monthly H_2S emissions will be determined as the sum of each H_2S pound per hour emission as recorded in **4.b.vii.** of this section.
      viii. The H_2S emissions, in tons per year based on a 12-month rolling period, will be determined at the end of each calendar month as the sum of the monthly H_2S emission rate, for the 12 immediately preceding calendar months.
   c. TDS sampling will be conducted as follows:
   A representative sample of the TDS (in ppm, by weight) from the water in the cooling tower basin will be collected, analyzed and recorded on a semi-annual basis.

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Section VI. Specific Operating Conditions (continued)

A. Emission Unit # PF1.001 (continued)

4. NAC 445B.3405 (NAC 445B.316) *Part 70 Program* (continued)
Performance/Compliance Testing and Monitoring/Recordkeeping (continued)
The Permittee, upon issuance of this operating permit will: (continued)

   d. To demonstrate compliance with the hourly and annual emission limits for PM and PM_{10}, the Permittee will:
      i. Monitor and record the cooling tower water flow rate, in pounds per hour, on a daily basis.
      ii. Monitor and record the cooling tower water flow rate, in pounds per hour, on a monthly basis.
      iii. Monitor and record the total annual cooling tower water flow rate, in tons per year, on a 12-month rolling period based on the cumulative records as specified in **4.d.ii.** of this section.
      iv. Record the total hours of operation for **PF1.001** on a daily basis.
      v. Record the total annual hours of operation for **PF1.001** based on the cumulative records as specified in **4.d.iv.** of this section.
   e. For annual reporting, the H_2S mass balance and calculated PM and PM_{10} emissions, including analytical reports as well as supporting documentation, must be submitted to the NDEP-BAPC by the time-frame specified in Section V.
   f. The required monitoring established in **4.b. and 4.d.** above, will be maintained in a contemporaneous log containing at a minimum, the following recordkeeping for each day, or part of a day that **PF1.001** is operating:
      i. The calendar date of any required monitoring.

5. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
Shielded Requirements

   No Shielded Requirements

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Section VI. Specific Operating Conditions (continued)

B. **Emission Unit # S2.001**; location North 4,424.399 km, East 426.934 km, UTM (Zone 11)

B. System 02 – Black-Start Diesel Generator	
S 2.001	Diesel-fired Generator (G-501); 2,020 HP; Detroit Diesel; Model # 9163-7316, Serial # 16E-08946/94975-01, Manufactured: 1987, SCC 20100102

1. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
   Air Pollution Equipment
   Emissions from **S2.001** shall be controlled by operating the diesel-fired generator in a manner which minimizes emissions.

   Stack Parameters
   Height: 18.4 ft
   Diameter: 1.18 ft
   Exhaust Temperature: 750.0 ^{o}F
   Velocity: 204.0 ft/sec
   Volume Flow: 4,233 DSCFM

2. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
   Emission Limits
   a. On and after the date of startup of **S2.001** the permittee will not discharge or cause the discharge into the atmosphere from the exhaust stack of **S2.001**, the following pollutants in excess of the following specified limits:
      i. NAC 445B.305 *Part 70 Program* – The discharge of PM_{10} (particulate matter less than 10 microns in diameter) to the atmosphere from the exhaust stack of **S2.001** will not exceed **4.54 pounds per any one hour period**. This limit is less than the **0.54 pound per million Btu** maximum allowable emission limit as determined from NAC 445B.2203 and the maximum allowable heat input rate as limited by **B.3.d.** of this section.
      ii. NAC 445B.305 *Part 70 Program* – The discharge of PM_{10} to the atmosphere from the exhaust stack of **S2.001** will not exceed **1.13 tons per year**, based on a 12-month rolling period.
      iii. NAC 445B.305 *Federally Enforceable SIP Requirement* – The discharge of PM (particulate matter) to the atmosphere from the exhaust stack of **S2.001** will not exceed **4.54 pounds per any one hour period**.
      iv. NAC 445B.305 *Federally Enforceable SIP Requirement* – The discharge of PM to the atmosphere from the exhaust stack of **S2.001** will not exceed **1.13 tons per year**, based on a 12-month rolling period.
      v. NAC 445B.22047 *Federally Enforceable SIP Requirement* – The maximum allowable discharge of sulfur to the atmosphere from the exhaust stack of **S2.001** will not exceed **10.85 pounds per hour**.
      vi. NAC 445B.305 *Part 70 Program* – The discharge of SO_2 (sulfur dioxide) to the atmosphere from the exhaust stack of **S2.001** will not exceed **7.36 pounds per any one hour period**, nor more than **1.84 tons per year**, based on a 12-month rolling period.
      vii. NAC 445B.305 *Part 70 Program* – The discharge of NO_X (nitrogen oxides) to the atmosphere from the exhaust stack of **S2.001** will not exceed **54.76 pounds per any one hour period**, nor more than **13.66 tons per year**, based on a 12-month rolling period.
      viii. NAC 445B.305 *Part 70 Program* – The discharge of CO (carbon monoxide) to the atmosphere from the exhaust stack of **S2.001** will not exceed **42.85 pounds per any one hour period**, nor more than **10.69 tons per year**, based on a 12-month rolling period.
      ix. NAC 445B.305 *Part 70 Program* – The discharge of VOC (volatile organic compounds) to the atmosphere from the exhaust stack of **S2.001** will not exceed **3.00 pounds per any one hour period**, nor more than **0.75 ton per year**, based on a 12-month rolling period.

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Section VI. Specific Operating Conditions (continued)

B. Emission Unit # S2.001 (continued)

2. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
Emission Limits
   a. On and after the date of startup of **S2.001** the permittee will not discharge or cause the discharge into the atmosphere from the exhaust stack of **S2.001**, the following pollutants in excess of the following specified limits: (Continued)

      x. NAC 445B.305 *Part 70 Program* – The discharge of Pb (lead) to the atmosphere from the exhaust stack of **S2.001** will not exceed **0.00014 pound per any one hour period**, nor more than **0.000035 ton per year**, based on a 12-month rolling period.
      xi. NAC 445B.22017 *Federally Enforceable SIP Requirement* – The opacity from the exhaust stack of **S2.001** will not equal or exceed 20%.

3. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
Operating Parameters
   a. Fuel
      i. **S2.001** may combust #2 diesel fuel only.
      ii. The maximum allowable #2 diesel fuel consumption rate for **S2.001** will not exceed **105.0 gallons per any one-hour period**.
      iii. The maximum sulfur content of the #2 diesel fuel combusted in **S2.001** will not exceed **0.5%, by weight**.
   b. The maximum allowable heat input rate for **S2.001** will not exceed **15.5 MMBtu/hr**.
   c. Hours
      i. **S2.001** may operate a total of **499.0 hours per year**, based on a 12-month rolling period.
      ii. **S2.001** may operate **24 hours per day** and up to **100 hours per calendar year**, for maintenance checks and readiness testing.
      iii. **S2.001** may operate up to **50 hours per calendar year** for non-emergency situations, but those **50 hours** are counted towards the **100 hours per year** provided for maintenance and testing.
      iv. **S2.001** may operate for a maximum of **15 hours** per year as part of a demand response program if the regional transmission organization or equivalent balancing authority and transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level. The engine may not be operated for more than **30 minutes** prior to the time when the emergency condition is expected to occur, and the engine operation must be terminated immediately after the facility is notified that the emergency condition is no longer imminent. The 15 hours per year of demand response operation are counted as part of the **50 hours** of operation per year provided for non-emergency situations. The supply of emergency power to another entity or entities pursuant to financial arrangement is not limited by this paragraph, as long as the power provided by the financial arrangement is limited to emergency power.
      v. There is no time limit for operation of **S2.001** during emergency situations.

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Section VI. Specific Operating Conditions (continued)

B. Emission Unit # S2.001 (continued)

3. NAC 445B.3405 (NAC 445B.316) *Part 70 Program* (continued)
Operating Parameters (continued)

d. Work Practice Standards – *Federally Required NESHAP Subpart ZZZZ Requirements*

i. Change oil and filter every **500 hours of operation** or annually, whichever comes first;

(1) ***The Permittee*** has the option to utilize an oil analysis program as described in 40CFR§63.6625(i) in order to extend the specified oil change requirement.

ii. Inspect air cleaner every **1,000 hours of operation** or annually, whichever comes first;

iii. Inspect all hoses and belts every **500 hours of operation** or **annually**, whichever comes first, and replace as necessary.

If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable.

iv. 40CFR§63.6625(h) – Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed **30 minutes**, after which time the non-startup emission limitations apply.

4. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
Monitoring, Recordkeeping, and Reporting

a. *Federally Enforceable NESHAP Requirement* – The Permittee must install a non-resettable hour meter if one is not already installed (40CFR§63.6625(f)).

b. Monitoring and Recordkeeping

i. The Permittee, upon issuance of this operating permit will:

(1) Monitor and record the quantity of #2 diesel fuel combusted for **S2.001** on a monthly basis.

(2) Monitor and record the sulfur content of the #2 diesel fuel combusted for **S2.001**, supplied by the fuel provider, as the fuel is delivered.

(3) Monitor and record the hours of operation of **S2.001** on a monthly basis.

(4) Monitor and record the hours of operation of **S2.001** on a 12-month rolling basis using the monthly hours of operation recorded in **B.4.a.i.(3)** of this section.

(a) 40CFR§63.6655(f) – ***The Permittee*** must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engines are used for demand response operation, the owner or operator must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response.

(5) The required monitoring established in **(1) through (4)** above, will be maintained in a contemporaneous log containing at a minimum, the following record keeping for each day, or part of a day that **S2.001** is operating:

(a) The calendar date of any required monitoring.

ii. Monitor and record the maintenance conducted on **S2.001** in **B.3.d.i. through B.3.d.iii.**

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Section VI. Specific Operating Conditions (continued)

B. Emission Unit # S2.001 (continued)

4. NAC 445B.3405 (NAC 445B.316) *Part 70 Program* (continued)
Monitoring, Recordkeeping, and Reporting (continued)

c. Reporting

i. *Federally Enforceable NESHAP Requirement* – The Permittee must report each instance in which the Permittee did not meet the requirements in **B.3.d.i. through B.3.d.iii.** (40CFR§63.6640(e)).

5. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
Shielded Requirements

No Shielded Requirements

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Section VI. Specific Operating Conditions (continued)

C. Emission Unit # S2.002; location North 4,424.399 km, East 426.934 km, UTM (Zone 11)

C. System 03 – Black-Start Diesel Generator	
S2.002	Diesel-fired Generator (G-502); 2,020 HP; Detroit Diesel; Model # 9163-7316, Serial # 16E-08946/94975-02, Manufactured: 1987, SCC 20100102

1. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
   Air Pollution Equipment
   Emissions from **S2.002** shall be controlled by operating the diesel-fired generator in a manner which minimizes emissions.

   Stack Parameters
   Height: 18.4 ft
   Diameter: 1.18 ft
   Exhaust Temperature: 750.0 ^{o}F
   Velocity: 204.0 ft/sec
   Volume Flow: 4,233 DSCFM

2. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
   Emission Limits
   a. On and after the date of startup of **S2.002** the permittee will not discharge or cause the discharge into the atmosphere from the exhaust stack of **S2.002**, the following pollutants in excess of the following specified limits:
      i. NAC 445B.305 *Part 70 Program* – The discharge of PM_{10} (particulate matter less than 10 microns in diameter) to the atmosphere from the exhaust stack of **S2.002** will not exceed **4.54 pounds per any one hour period**. This limit is less than the **0.54 pound per million Btu** maximum allowable emission limit as determined from NAC 445B.2203 and the maximum allowable heat input rate as limited by **C.3.d.** of this section.
      ii. NAC 445B.305 *Part 70 Program* – The discharge of PM_{10} to the atmosphere from the exhaust stack of **S2.002** will not exceed **1.13 tons per year**, based on a 12-month rolling period.
      iii. NAC 445B.305 *Part 70 Program* – The discharge of PM (particulate matter) to the atmosphere from the exhaust stack of **S2.002** will not exceed **4.54 pounds per any one hour period**.
      iv. NAC 445B.305 *Part 70 Program* – The discharge of PM to the atmosphere from the exhaust stack of **S2.002** will not exceed **1.13 tons per year**, based on a 12-month rolling period.
      v. NAC 445B.22047 *Federally Enforceable SIP Requirement* – The maximum allowable discharge of sulfur to the atmosphere from the exhaust stack of **S2.002** will not exceed **10.85 pounds per hour**.
      vi. NAC 445B.305 *Part 70 Program* – The discharge of SO_2 (sulfur dioxide) to the atmosphere from the exhaust stack of **S2.002** will not exceed **7.36 pounds per any one hour period**, nor more than **1.84 tons per year**, based on a 12-month rolling period.
      vii. NAC 445B.305 *Part 70 Program* – The discharge of NO_X (nitrogen oxides) to the atmosphere from the exhaust stack of **S2.002** will not exceed **54.76 pounds per any one hour period**, nor more than **13.66 tons per year**, based on a 12-month rolling period.
      viii. NAC 445B.305 *Part 70 Program* – The discharge of CO (carbon monoxide) to the atmosphere from the exhaust stack of **S2.002** will not exceed **42.85 pounds per any one hour period**, nor more than **10.69 tons per year**, based on a 12-month rolling period.
      ix. NAC 445B.305 *Part 70 Program* – The discharge of VOC (volatile organic compounds) to the atmosphere from the exhaust stack of **S2.002** will not exceed **3.00 pounds per any one hour period**, nor more than **0.75 ton per year**, based on a 12-month rolling period.

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Section VI. Specific Operating Conditions (continued)

C. Emission Unit # S2.002 (continued)

2. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
Emission Limits

a. On and after the date of startup of **S2.002** the permittee will not discharge or cause the discharge into the atmosphere from the exhaust stack of **S2.002**, the following pollutants in excess of the following specified limits: (Continued)

x. NAC 445B.305 *Part 70 Program* – The discharge of Pb (lead) to the atmosphere from the exhaust stack of **S2.002** will not exceed **0.00014 pound per any one hour period**, nor more than **0.000035 ton per year**, based on a 12-month rolling period.

xi. NAC 445B.22017 *Federally Enforceable SIP Requirement* – The opacity from the exhaust stack of **S2.002** will not equal or exceed **20%**.

3. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
Operating Parameters

a. Fuel

i. **S2.002** may combust #2 diesel fuel only.

ii. The maximum allowable #2 diesel fuel consumption rate for **S2.002** will not exceed **105.0 gallons per any one-hour period**.

iii. The maximum sulfur content of the #2 diesel fuel combusted in **S2.002** will not exceed **0.5%, by weight**.

b. The maximum allowable heat input rate for **S2.002** will not exceed **15.5 MMBtu/hr**.

c. Hours

i. **S2.002** may operate a total of **499.0 hours per year**, based on a 12-month rolling period.

ii. **S2.002** may operate **24 hours per day** and up to **100 hours per calendar year**, for maintenance checks and readiness testing.

iii. **S2.002** may operate up to **50 hours per calendar year** for non-emergency situations, but those **50 hours** are counted towards the **100 hours per year** provided for maintenance and testing.

iv. **S2.002** may operate for a maximum of **15 hours** per year as part of a demand response program if the regional transmission organization or equivalent balancing authority and transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level. The engine may not be operated for more than **30 minutes** prior to the time when the emergency condition is expected to occur, and the engine operation must be terminated immediately after the facility is notified that the emergency condition is no longer imminent. The 15 hours per year of demand response operation are counted as part of the **50 hours** of operation per year provided for non-emergency situations. The supply of emergency power to another entity or entities pursuant to financial arrangement is not limited by this paragraph, as long as the power provided by the financial arrangement is limited to emergency power.

v. There is no time limit for operation of **S2.002** during emergency situations.

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Section VI. Specific Operating Conditions (continued)

C. Emission Unit # S2.002 (continued)

3. NAC 445B.3405 (NAC 445B.316) *Part 70 Program* (continued)
Operating Parameters (continued)

d. Work Practice Standards – *Federally Required NESHAP Subpart ZZZZ Requirements*

i. Change oil and filter every **500 hours of operation** or annually, whichever comes first;

(1) ***The Permittee*** has the option to utilize an oil analysis program as described in 40CFR§63.6625(i) in order to extend the specified oil change requirement.

ii. Inspect air cleaner every **1,000 hours of operation** or annually, whichever comes first;

iii. Inspect all hoses and belts every **500 hours of operation** or **annually**, whichever comes first, and replace as necessary.

If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable.

iv. 40CFR§63.6625(h) – Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed **30 minutes**, after which time the non-startup emission limitations apply.

4. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
Monitoring, Recordkeeping, and Reporting

a. *Federally Enforceable NESHAP Requirement* – The Permittee must install a non-resettable hour meter if one is not already installed (40CFR§63.6625(f)).

b. Monitoring and Recordkeeping

i. The Permittee, upon issuance of this operating permit will:

(1) Monitor and record the quantity of #2 diesel fuel combusted for **S2.002** on a monthly basis.

(2) Monitor and record the sulfur content of the #2 diesel fuel combusted for **S2.002**, supplied by the fuel provider, as the fuel is delivered.

(3) Monitor and record the hours of operation of **S2.002** on a monthly basis.

(4) Monitor and record the hours of operation of **S2.002** on a 12-month rolling basis using the monthly hours of operation recorded in **C.4.a.i.(3)** of this section.

(a) 40CFR§63.6655(f) – ***The Permittee*** must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engines are used for demand response operation, the owner or operator must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response.

(5) The required monitoring established in **(1) through (4)** above, will be maintained in a contemporaneous log containing at a minimum, the following record keeping for each day, or part of a day that **S2.002** is operating:

(a) The calendar date of any required monitoring.

ii. Monitor and record the maintenance conducted on **S2.002** in **C.3.d.i. through C.3.d.iii.**

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Section VI. Specific Operating Conditions (continued)

C. Emission Unit # S2.002 (continued)

4. NAC 445B.3405 (NAC 445B.316) *Part 70 Program* (continued)
Compliance, Monitoring, Recordkeeping and Reporting (continued)
The Permittee, upon the issuance date of this permit, will: (continued)

c. Reporting

i. *Federally Enforceable NESHAP Requirement* – The Permittee must report each instance in which the Permittee did not meet the requirements in **C.3.d.i. through C.3.d.iii.** (40CFR§63.6640(e)).

5. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
Shielded Requirements

No Shielded Requirements

Issued to: Terra-Gen Dixie Valley, LLC, as Permittee

Section VI. Specific Operating Conditions (continued)

D. **Emission Unit # S2.003**; location North 4,424.410 km, East 426.925 km, UTM (Zone 11)

D. System 04 – Emergency Diesel Generator	
S2.003	Diesel-fired Generator (G-503); 268 HP, 200 kW; Detroit Diesel; Model # 1063-7305, Serial # 0006A0456544, Manufactured: 1987, SCC 20100102

1. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
   Air Pollution Equipment
   Emissions from **S2.003** shall be controlled by operating the diesel-fired generator in a manner which minimizes emissions.

   Stack Parameters
   Height: 18.4 ft
   Diameter: 0.43 ft
   Exhaust Temperature: 820 ^{o}F
   Velocity: 302 ft/sec
   Volume Flow: 2,590 ACFM

2. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
   Emission Limits
   On and after the date of startup of **S2.003** the permittee will not discharge or cause the discharge into the atmosphere from the exhaust stack of **S2.003**, the following pollutants in excess of the following specified limits:
   a. NAC 445B.305 *Part 70 Program* – The discharge of PM_{10} (particulate matter less than 10 microns in diameter) to the atmosphere from the exhaust stack of **S2.003** will not exceed **0.74 pound per hour**, or more than **0.04 ton per year**, based on a 12-month rolling period.
   b. NAC 445B.305 *Part 70 Program* – The discharge of PM (particulate matter) to the atmosphere from the exhaust stack of **S2.003** will not exceed **0.74 pound per hour**, or more than **0.04 ton per year**, based on a 12-month rolling period.
   c. NAC 445B.22047 *Federally Enforceable SIP Requirement* – The maximum allowable discharge of sulfur to the atmosphere from the exhaust stack of **S2.003** will not exceed **1.7 pounds per hour**.
   d. NAC 445B.305 *Part 70 Program* – The discharge of SO_2 (sulfur dioxide) to the atmosphere from the exhaust stack of **S2.003** will not exceed **0.69 pounds per any one hour period**, or more than **0.04 ton per year**, based on a 12-month rolling period.
   e. NAC 445B.305 *Part 70 Program* – The discharge of NO_X (nitrogen oxides) to the atmosphere from the exhaust stack of **S2.003** will not exceed **10.42 pounds per any one hour period**, or more than **0.52 ton per year**, based on a 12-month rolling period.
   f. NAC 445B.305 *Part 70 Program* – The discharge of CO (carbon monoxide) to the atmosphere from the exhaust stack of **S2.003** will not exceed **2.25 pounds per any one hour period**, or more than **0.11 ton per year**, based on a 12-month rolling period.
   g. NAC 445B.305 *Part 70 Program* – The discharge of VOC (volatile organic compounds) to the atmosphere from the exhaust stack of **S2.003** will not exceed **0.83 pound per any one hour period**, or more than **0.04 ton per year**, based on a 12-month rolling period.
   h. NAC 445B.22017 *Federally Enforceable SIP Requirement* – The opacity from the exhaust stack of **S2.003** will not equal or exceed **20%**.

Issued to: Terra-Gen Dixie Valley, LLC, as Permittee

Section VI. Specific Operating Conditions (continued)

D. Emission Unit # S2.003 (continued)

3. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
Operating Parameters
   a. Fuel
      i. **S2.003** may combust #2 diesel fuel only.
      ii. The maximum allowable #2 diesel fuel consumption rate for **S2.003** will not exceed **16.0 gallons per any one-hour period**.
      iii. The maximum sulfur content of the #2 diesel fuel combusted in **S2.003** will not exceed **0.5%, by weight**.
   b. The maximum allowable heat input rate for **S2.003** will not exceed **2.36 MMBtu/hr**.
   c. Hours - *Federally Required NESHAP Subpart ZZZZ Requirements*
      i. **S2.003** may operate **24 hours per day** and up to **100 hours per calendar year**, for maintenance checks and readiness testing.
      ii. **S2.003** may operate up to **50 hours per calendar year** for non-emergency situations, but those **50 hours** are counted towards the **100 hours per year** provided for maintenance and testing.
      iii. **S2.003** may operate for a maximum of **15 hours** per year as part of a demand response program if the regional transmission organization or equivalent balancing authority and transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level. The engine may not be operated for more than **30 minutes** prior to the time when the emergency condition is expected to occur, and the engine operation must be terminated immediately after the facility is notified that the emergency condition is no longer imminent. The 15 hours per year of demand response operation are counted as part of the **50 hours** of operation per year provided for non-emergency situations. The supply of emergency power to another entity or entities pursuant to financial arrangement is not limited by this paragraph, as long as the power provided by the financial arrangement is limited to emergency power.
      iv. There is no time limit for operation of **S2.003** during emergency situations.

   d. Work Practice Standards – *Federally Required NESHAP Subpart ZZZZ Requirements*
      i. Change oil and filter every **500 hours of operation** or annually, whichever comes first;
         (1) ***The Permittee*** has the option to utilize an oil analysis program as described in 40CFR§63.6625(i) in order to extend the specified oil change requirement.
      ii. Inspect air cleaner every **1,000 hours of operation** or annually, whichever comes first;
      iii. Inspect all hoses and belts every **500 hours of operation** or annually, whichever comes first, and replace as necessary.

   If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable.

      iv. 40CFR§63.6625(h) – Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed **30 minutes**, after which time the non-startup emission limitations apply.

Issued to: Terra-Gen Dixie Valley, LLC, as Permittee

Section VI. Specific Operating Conditions (continued)

D. Emission Unit # S2.003 (continued)

4. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
Compliance, Monitoring, Recordkeeping and Reporting
The Permittee, upon the issuance date of this permit, will:
   a. *Federally Enforceable NESHAP Requirement* – The Permittee must install a non-resettable hour meter if one is not already installed (40CFR§63.6625(f)).
   b. Monitor and Record the hours of operation for **S2.003** when **S2.003** is operating.
      i. Monitor and record the total monthly hours of operation of **S2.003** each day of operation.
         (1) 40CFR§63.6655(f) – ***The Permittee*** must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engines are used for demand response operation, the owner or operator must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response.
      ii. Monitor and record the total monthly fuel consumption for **S2.003** each month of operation.
      iii. Monitor and record the maintenance conducted on **S2.003** in **D.3.d.i. through D.3.d.iii.**
      iv. The required monitoring established in **i. through iii.** above, will be maintained in a contemporaneous log containing at a minimum, the following record keeping for each day, or part of a day that **S2.003** are operating:
         (1) The calendar date of any required monitoring.
   c. Reporting
      i. *Federally Enforceable NESHAP Requirement* – The Permittee must report each instance in which the Permittee did not meet the requirements in **D.3.d.i. through D.3.d.iii.** (40CFR§63.6640(e)).

5. NAC 445B.3405 (445B.316) *Part 70 Program*
Shielded Requirements
No specific shield requested.

Issued to: Terra-Gen Dixie Valley, LLC, as Permittee

Section VI. Specific Operating Conditions (continued)

E. **Emission Unit # S2.004**; location North 4,424.383 km, East 426.973 km, UTM (Zone 11)

E. System 05 – Emergency Fire Pump	
S2.004	Diesel-fired Fire Pump (P-601); 260 HP; Caterpillar; Model # PA0067-87, Serial # 64206098, Manufactured: 1987, SCC 20200102

1. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
   Air Pollution Equipment
   Emissions from **S2.004** shall be controlled by operating the diesel-fired generator in a manner which minimizes emissions.

   Stack Parameters
   Height: 18.0 ft
   Diameter: 0.43 ft
   Exhaust Temperature: 820 ^{o}F
   Velocity: 92.0 ft/sec
   Volume Flow: 789 ACFM

2. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
   Emission Limits
   On and after the date of startup of **S2.004** the permittee will not discharge or cause the discharge into the atmosphere from the exhaust stack of **S2.004**, the following pollutants in excess of the following specified limits:
   a. NAC 445B.305 *Part 70 Program* – The discharge of PM_{10} (particulate matter less than 10 microns in diameter) to the atmosphere from the exhaust stack of **S2.004** will not exceed **0.62 pound per hour**, or more than **0.03 ton per year**, based on a 12-month rolling period.
   b. NAC 445B.305 *Part 70 Program* – The discharge of PM (particulate matter) to the atmosphere from the exhaust stack of **S2.004** will not exceed **0.62 pound per hour**, or more than **0.03 tons per year**, based on a 12-month rolling period.
   c. NAC 445B.22047 *Federally Enforceable SIP Requirement* – The maximum allowable discharge of sulfur to the atmosphere from the exhaust stack of **S2.004** will not exceed **1.4 pounds per hour**.
   d. NAC 445B.305 *Part 70 Program* – The discharge of SO_2 (sulfur dioxide) to the atmosphere from the exhaust stack of **S2.004** will not exceed **0.58 pound per any one hour period**, or more than **0.03 ton per year**, based on a 12-month rolling period.
   e. NAC 445B.305 *Part 70 Program* – The discharge of NO_X (nitrogen oxides) to the atmosphere from the exhaust stack of **S2.004** will not exceed **8.79 pounds per any one hour period**, or more than **0.44 ton per year**, based on a 12-month rolling period.
   f. NAC 445B.305 *Part 70 Program* – The discharge of CO (carbon monoxide) to the atmosphere from the exhaust stack of **S2.004** will not exceed **1.89 pounds per any one hour period**, or more than **0.10 ton per year**, based on a 12-month rolling period.
   g. NAC 445B.305 *Part 70 Program* – The discharge of VOC (volatile organic compounds) to the atmosphere from the exhaust stack of **S2.004** will not exceed **0.70 pound per any one hour period**, or more than **0.04 ton per year**, based on a 12-month rolling period.
   h. NAC 445B.22017 *Federally Enforceable SIP Requirement* – The opacity from the exhaust stack of **S2.004** will not equal or exceed **20%**.

Issued to: Terra-Gen Dixie Valley, LLC, as Permittee

Section VI. Specific Operating Conditions (continued)

E. Emission Unit # S2.004 (continued)

3. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
Operating Parameters
   a. Fuel
      i. **S2.004** may combust #2 diesel fuel only.
      ii. The maximum allowable #2 diesel fuel consumption rate for **S2.004** will not exceed **13.5 gallons per any one-hour period**.
      iii. The maximum sulfur content of the #2 diesel fuel combusted in **S2.004** will not exceed **0.5%, by weight**.
   b. The maximum allowable heat input rate for **S2.004** will not exceed **1.99 MMBtu/hr**.
   c. Hours - *Federally Required NESHAP Subpart ZZZZ Requirements*
      i. **S2.004** may operate **24 hours per day** and up to **100 hours per calendar year**, for maintenance checks and readiness testing.
      ii. **S2.004** may operate up to **50 hours per calendar year** for non-emergency situations, but those **50 hours** are counted towards the **100 hours per year** provided for maintenance and testing.
      iii. **S2.004** may operate for a maximum of **15 hours** per year as part of a demand response program if the regional transmission organization or equivalent balancing authority and transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level. The engine may not be operated for more than **30 minutes** prior to the time when the emergency condition is expected to occur, and the engine operation must be terminated immediately after the facility is notified that the emergency condition is no longer imminent. The 15 hours per year of demand response operation are counted as part of the **50 hours** of operation per year provided for non-emergency situations. The supply of emergency power to another entity or entities pursuant to financial arrangement is not limited by this paragraph, as long as the power provided by the financial arrangement is limited to emergency power.
      iv. There is no time limit for operation of **S2.004** during emergency situations.

   d. Work Practice Standards – *Federally Required NESHAP Subpart ZZZZ Requirements*
      i. Change oil and filter every **500 hours of operation** or annually, whichever comes first;
         (1) ***The Permittee*** has the option to utilize an oil analysis program as described in 40CFR§63.6625(i) in order to extend the specified oil change requirement.
      ii. Inspect air cleaner every **1,000 hours of operation** or annually, whichever comes first;
      iii. Inspect all hoses and belts every **500 hours of operation** or **annually**, whichever comes first, and replace as necessary.

   If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable.

      iv. 40CFR§63.6625(h) – Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed **30 minutes**, after which time the non-startup emission limitations apply.

Issued to: Terra-Gen Dixie Valley, LLC, as Permittee

Section VI. Specific Operating Conditions (continued)

E. Emission Unit # S2.004 (continued)

4. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*
Compliance, Monitoring, Recordkeeping and Reporting
The Permittee, upon the issuance date of this permit, will:
   a. *Federally Enforceable NESHAP Requirement* – The Permittee must install a non-resettable hour meter if one is not already installed (40CFR§63.6625(f)).
   b. Monitor and Record the hours of operation for **S2.004** when **S2.004** is operating.
      i. Monitor and record the total monthly hours of operation of **S2.004** each day of operation.
         (1) 40CFR§63.6655(f) – ***The Permittee*** must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engines are used for demand response operation, the owner or operator must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response.
      ii. Monitor and record the total monthly fuel consumption for **S2.004** each month of operation.
      iii. Monitor and record the maintenance conducted on **S2.004** in **E.3.d.i. through E.3.d.iii.**
      iv. The required monitoring established in **i. through iii.** above, will be maintained in a contemporaneous log containing at a minimum, the following record keeping for each day, or part of a day that **S2.004** are operating:
         (1) The calendar date of any required monitoring.
   c. Reporting
      i. *Federally Enforceable NESHAP Requirement* – The Permittee must report each instance in which the Permittee did not meet the requirements in **E.3.d.i. through E.3.d.iii.** (40CFR§63.6640(e)).

5. NAC 445B.3405 (445B.316) *Part 70 Program*
Shielded Requirements
No specific shield requested.

*******End of Specific Operating Conditions*******

Issued to: Terra-Gen Dixie Valley, LLC, as Permittee

Section VII. Emission Caps

No Emission Caps Defined

*******End of Emission Caps*******

Issued to: Terra-Gen Dixie Valley, LLC, as Permittee

Section VIII. Surface Area Disturbance Conditions

A. Dust Control Plan

1. Permittee will control fugitive dust in accordance with the dust control plan entitled "Dust Control Plan, Terra-Gen Dixie Valley, LLC, Geothermal Power Project", as submitted on **May 10, 2011**.

*******End of Surface Area Disturbance Conditions*******

Issued to: Terra-Gen Dixie Valley, LLC, as Permittee

Section IX. Schedules of Compliance

Not applicable

*******End of Schedules of Compliance*******

Facility ID No. A0376 *Permit No.* AP4911–0756.02
CLASS I AIR QUALITY OPERATING PERMIT
SPECIFIC OPERATING REQUIREMENTS

Issued to: Terra-Gen Dixie Valley, LLC, as Permittee

Section X. Amendments

October 2012

A. System 01 – Cooling Tower
   1. Remove calculation of H_2S Injectate and Oxidation
   2. Change H_2S sampling at each active well to High Pressure (HP) and Low Pressure (LP) steam separators
   3. Clarify H_2S sampling is required every two years
   4. Change TDS sampling to semi-annual basis

B. System 02 – Black-Start Diesel Generator and System 03 – Black Start Diesel Generator
   1. Increase emission limits for PM, PM10 and VOC
   2. Added NESHAP ZZZZ

C. System 04 – Emergency Diesel Generator and System 05 – Emergency Diesel Fire Pump
   1. Added because of NESHAP ZZZZ Requirements

D. Insignificant Activities
   1. Removed Emergency Diesel Generator
   2. Removed Emergency Diesel Fire Pump
   3. Added IA1.017 Lube Oil Tank for Binary Unit

This permit:

1. **Is non-transferable. (NAC 445B.287.4) *Part 70 Program***
2. **Will be posted conspicuously at or near the stationary source. (NAC 445B.318) *State Only Requirement***
3. **Will expire and be subject to renewal five (5) years after: February 11, 2012 (NAC 445B.315 and 3443.1) *Part 70 Program***
4. **A complete application for the renewal of a Class I operating permit must be submitted to the director on the form provided by the director with the appropriate fee at least 240 days, but no earlier than 18 months, before the expiration date of the current Class I operating permit for stationary sources. (NAC 445B.3443.2) *Part 70 Program***
5. **Any party aggrieved by the Department's decision to issue this permit may appeal to the State Environmental Commission (SEC) within ten days after the date of notice of the Department's action. (NRS 445B.340) *State Only Requirement)***

THIS PERMIT EXPIRES ON: **February 11, 2017**

Signature _____

Issued by: Jeffrey Kinder, PE
Supervisor, Permitting Branch
Bureau of Air Pollution Control

Phone: (775) 687-9475 Date: April 1, 2013

bk
10/12

Class I Non-Permit Equipment List

Appended to Terra-Gen Dixie Valley, LLC Facility #A0376 Permit #AP4911-0756.02

Emission Unit #	Emission Unit Description
IA1.001	Diesel Fuel Storage Tank #1 (10,000-gallon capacity)
IA1.002	Diesel Fuel Storage Tank #2 (5,000-gallon capacity)
IA1.003	Diesel Fuel Storage Tank #3 (752-gallon capacity)
IA1.004	Diesel Fuel Storage Tank #4 (50-gallon capacity)
IA1.005	Highway Diesel Fuel Storage Tank (1,000-gallon capacity)
IA1.006	Off-Road Diesel Fuel Storage Tank (1,000-gallon capacity)
IA1.007	Diesel Fuel Storage Tank: Fire Pump (250-gallon capacity)
IA1.008	Lube Oil Tank (Clean Oil) (5,000-gallon capacity)
IA1.009	Lube Oil Tank (Used Oil) (5,000-gallon capacity)
IA1.010	Main Oil Tank (Lube Oil for Generator) (5,000-gallon capacity)
IA1.011	Waste Oil Tank (1,000-gallon capacity)
IA1.012	Unleaded Gas Tank (2,000-gallon capacity)
IA1.013	Unleaded Gas Tank (1,000-gallon capacity)
IA1.014	Waste Oil Space Heater
IA1.015	Lube Oil Tank for Binary Unit (1,975 gallons)

Note: The equipments listed on this attachment are subject to all applicable requirements of the NAC and ASIP.